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**MANRES ASSESSMENT
FINAL REPORT**

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November 7, 1991

Mr. B. Donald Reese
Acting Deputy Director
USAID
Bangkok, Thailand

Dear Mr. Reese,

The following MANRES Assessment was produced under Purchase Order 499-0000-0-00-1173-00. The report incorporates the work of Dr. Carolyn Shumway, from AID's Office of the Environmental Coordinator, Dr. Phillip Church from AID's Center for Development Information and Evaluation, as well as Dr. Tongroj Onchan, professor at Kasetsart University.


Dr. Shumway's drafts covered; Environmental Awareness and Education, Coastal Resource Management, and Biological Resource Management. Dr. Onchan's drafts covered; Industrial Environmental Management, Rural Resource Management, and Policy Analysis and Development. While Dr. Church drafted the Monitoring System and Illustrative Targets, he also assisted in several earlier drafts of the entire report.

I was not able to incorporate all of Dr. Shumway's work. She will be submitting her full report later. Her work is comprehensive and should be useful in the redesign process.

I have tried to be responsive to the requests and issues raised at our Oct. 24 morning meeting, as well as your and Peter Thormann's written comments. I have also added a management option resulting from a lengthy meeting with DTEC the same day, in the afternoon.

The recommendations on program designs and management are mine, and may not necessarily be shared by the other team members.

Sincerely yours,



Peter Gajewski
Team Leader

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PART I EXECUTIVE SUMMARY

The MANRES Project was well designed and well received by the RTG, NGO's and the private sector. Inadequate staffing at all implementation levels, however, caused delays in achieving project objectives.

Expectations of all the implementing agencies are that the Project will continue to support its original objectives. There was general agreement, however, that the implementation mode should be improved. After lengthy discussions, DTEC and NESDB support the recommended program mode, although all the details have not yet been agreed upon.

Utilizing the guidelines set out in the USAID/Thailand Assistance Management Plan, this report recommends the introduction of a Program Support Grant (PSG) mechanism. A portion of MANRES funds would be disbursed as a cash transfer to support attaining some policy objectives of the existing MANRES Project as well as some objectives of the Natural Resource Management and Environment in the Seventh Five Year Plan. These objectives should be more narrowly focussed than in the original MANRES Project.

It is further recommended that the re-started MANRES Program be directed by a Joint Program Steering Committee (JPSC), with the support of an independent full time Monitoring and Evaluation Group funded by MANRES. One option is that the JPSC would be composed of the AID Director, the DTEC Director General and the NESDB Secretary General. Another option, suggested by DTEC would bring the Bureau of the Budget into the JPSC to assure sustainability through regular budget support. This option would also place AID and DTEC in a direct Program management role, and place NESDB responsibilities to include performance monitoring. These Management options are described in Part II - 4 of this report.

This Report recommends that all MANRES project activities be shifted to the Program Support Grant mode, with the exception of the following :

- The Human Resource Development Program
- U.S. Non-Governmental Organizations
- FTI, WEC and WWF
- Possibly some pilot projects

To maintain support for the broad MANRES objectives, the policy agenda and benchmarks for disbursement will be carefully formulated to include selected and more focused original project goals as well as support to the 5 year Plan objectives (Part II - 2). These goals would be supported through the new PSG

mechanism, thus significantly reducing both AID's and DTEC's management burdens. Also, the PSG mode is more effective than the project mode in supporting targeted performance in the implementation of the natural resource management and environmental programs. Part III of this report presents an option of retaining more of the project mode activities.

Some of the past commitments of \$7.49 million may be partially met, but only minimally through the former project mode, the bulk of the money would be shifted to the new performance based PSG. The MANRES program would include a policy agenda and measurable benchmarks on which obligations would be based in support of selected Five Year Plan objectives and selected former MANRES goals. This mechanism will give the USAID Director an opportunity for a highly visible role in supporting the Thai natural resource management and environmental agenda through his policy dialogue with the RTG in evaluating performance.

Another major MANRES Program component would be the U.S.-Thai Development Partnerships Fund, which would be used to support joint U.S.-Thai private sector investment. MANRES related transactions could be funded until the Fund Project gets underway, and then be transferred to the Fund, or could remain a permanent part of MANRES, giving it a greater private sector emphasis.

The Human Resource Development Program should target the private sector. All long term participants should be from the private sector, with only 10-20 percent from universities. Programs should focus on environmentally related technology and management. Short term training related to implementing better resource management and environmental engineering should be split 50/50 between RTG agencies and the private sector.

There were 211 on-going activities as of 2/23/91 with estimated budgets amounting approximately 11.8 million dollars. About 150 were terminated immediately and 58 activities, including TA contracts, commodity transactions, personal services contracts, with an estimated budget of \$1.4 million dollars were included in the Windup Plan. By 10/22/91 all activities under MANRES were wound up, except for 10 participants studying in the United States and three PVO activities.

FUNDING SUMMARY

Total Authorized	\$44,000,000
Total Obligation	\$17,280,285
Total Earmarked	\$13,971,018
Total Committed	\$12,467,177
Total Disbursed	\$ 4,900,000 (est)

PART II RECOMMENDATION FOR RESTRUCTURING

AND

PROGRAM MANAGEMENT

1. INTRODUCTION - PRINCIPLES FOR MANRES RE-START

- o Past commitments totaled \$7.49 million as of 10/02/91. Some Thai officials especially at the implementation levels have conveyed to us that the considerable trust and progress in the 40 year U.S.-Thai relationship will be damaged if past commitments are not honored. Others, especially the NESDB, voiced the view that the re-start of MANRES is to be undertaken as a new project discarding non-performing elements and possibly adding new ones. DTEC has also supported an improved implementation mode. Before revising the Project, one needs to consider the direct and indirect anticipated costs of terminating or phasing out old activities.
- o Shift the majority of MANRES resources into a performance based program (Part II - 2) and support for the private sector through a transactions based series of programs (Part II - 3).
- o Provide \$1 million through the PSG mechanism as previously agreed, to the Provincial Natural Resource Management Planning Process Fund as a last gesture, assuming the RTG will continue these activities in the future. Based on A.I.D. continuing this component, the Thais have put in 6 billion Baht into the provincial fund over the last two years.
- o Human Resource Development needs to be much more focused on environmentally related technology and resource management, and directed to the private sector. Selection of private sector participants is not easy, but it has been done in other countries. One scenario would be to allocate all long term programs to private sector participants with only 10-20 percent to universities. Short term programs should be targeted to operational needs of industry and government. Environmental engineering and management as well as monitoring the environment and enforcement methods are important areas of short term programs. The management of medium to long term training can be significantly reduced through a cooperative agreement with the

Fulbright Foundation or other management groups. Short-term training can be handled by specialized institutions: e.g. WEC for urban/industrial training; HIID for policy; WWF (BSP) and NPS PASA for wildlife and conservation training.

- o Allow the integrated cross-sectoral nature of MANRES to work by focusing efforts in support of RTG and private sector pilot projects: e.g. Phuket area development, Chiangmai solid waste disposal and biological diversity efforts targeted toward Huay Kha Kaeng/Thung Yai Naresuan sanctuaries. These could be partially financed through a PSG mechanism.
- o That the policy agenda and benchmarks be more narrowly focused than the current array of sub-project activities. The principal focal area should be the urban - industrial sector. This sector is probably the most critical to accelerated environmental degradation. It also is the sector where the U.S.-Thai Partnerships Fund has a significant potential contribution to make.
- o Reduce AID/Thailand management burden by:
 - (a) Shifting a significant part of MANRES resources into a performance based program outlined in Part II - 2 of this report;
 - (b) Fund a Monitoring and Evaluation Groups (MEG) to perform certain management functions, outlined in Part II - 4 of the Report.
 - (c) Using multi-year work plans where appropriate.
 - (d) Simplifying break-down of budgetary components in work plans such that minor changes can be made without having to repeat various budgetary processes, both in DTEC and AID

2. PROGRAM SUPPORT GRANT COMPONENT AND POLICY AGENDA

The MANRES Program Support Grant (PSG) will target objectives of the Seventh Five Year Plan (1992-1996) which began October 1, 1991, as well as objectives within the current MANRES Project. These objectives will be selected, and negotiated through the Joint Program Steering Committee and the line ministries (see below). They will be developed from the Natural Resource Management, Environmental and other relevant components of the Plan and the MANRES sub-project objectives. The PSG targeted budget support should be more focused than the original MANRES project. As outlined in this Part of the Report, the policy

agenda and benchmarks focus on the urban - industrial sector, although not exclusively. This is where interventions must be made now to preserve the sustainability of economic growth.

The MANRES project, as originally designed, supported many of the objectives of the current Five Year Plan through projectized activities. Direct MANRES project support for many of these activities can now be significantly reduced, and instead, along with additional performance targets be supported through a Program Support Grant mechanism. These activities will be partially financed with AID grant funds (co-mingled with DTEC counterpart funds and agency budget funds where feasible) channeled to add to the budgets of the implementing agencies. The balance of the financing would come from Thai Government sources or other donors as agreed with USAID. One such source could be Tokyo's Green Aid Plan. Also appropriate private sector investment is very important, and will be supported through the U.S.-Thai Fund Part of MANRES.

It is important to note that the detailed funding recommendations in Part III of this report are not consistent, in most cases, with the overall recommendation of this report; which is to shift all but the following activities to the Program Supports Grant mode:

- Human Resource Development Program
- U.S. Non-Government Organizations
- FTI, WEC, and WWF
- Possibly some pilot projects

The value of the sub-project recommendations in Part III, lies in the fact that they could be continued by RTG agencies under a PSG, if these agencies and AID feel that they meet the program performance objectives agreed to with AID.

The Program Support Grant for Thailand is for targeted budget support. This means that AID must participate in a policy dialogue over the life of the project, to determine, based on performance which agencies receive support through the PSG. However, as distinct from past practices in managing projects, these decisions would be made annually -- at the time funds are obligated -- rather than periodically, during disbursements for the procurement of project inputs.

Budgetary support for the RTG cannot be justified on balance of payments nor lack of Government resources grounds. Therefore there must be a linkage between the AID Grant funds through the PSG and the implemented targets. It is recognized that some targets are the responsibility of

more than one agency making the PSG fund allocation process complex but not impossible.

Shifting into a program support mode means the disbursements will no longer depend on project outputs, such as technical assistance, persons trained, studies conducted, seminars held, etc. Disbursements will now be based on performance in meeting agreed-to targets or program-level objectives. These targets will be developed from the RTG's Five Year Plan and current MANRES objectives. A proposed policy agenda for discussion with the RTG is contained in this section. A broader list of proposed targets, and a monitoring system is contained in Part II - 6. This system disaggregate the multi-year targets into annual and periodic events, or benchmarks for the purposes of monitoring and disbursements.

It is proposed that the Program Support Grant Component of MANRES cover the entire 5 years of the RTG's plan period. The first of five annual obligation would be made after formal agreement on a policy and performance targets as well as agenda budget allocations for the targeted implementing agencies. Subsequent obligations would be based on an annual review of the RTG's performance in achieving subsequent targets as developed in the PSG agreement.

Annual obligations will be allocated to support the budgets of the implementing agencies as agreed by a Joint Program Steering Committee (JPSC) as outlined below. The JPSC will need a support staff, it should be a full time administrative staff-support unit to oversee and support the implementations of MANRES activities. It is described in Part II, Section 4. If certain targets are not met, the JPSC could shift its support to other implementing agencies (targets) during the course of the program. These adjustments would be negotiated at the formal annual review held by the JPSC. Responsible RTG agencies would conduct comprehensive monitoring and evaluation programs throughout the course of each year, and submit their findings to the JPSC. Outputs from the monitoring program would serve as a basis for the JPSC deliberations at the annual review, and for the AID Director's environmental policy dialogue sessions with senior RTG officials.

Based on our discussions with DTEC, AID funds could be co-mingled with RTG counterpart funds at the DTEC level. The PSG Agreement would include a first year allocation of AID PSG funds --- co-mingled with RTG funds --- to RTG agencies that are implementing the environmental and natural resource management program. The funds would not be directly administered by DTEC under current complicated regulations. A new set of flexible and simplified

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regulations will need to be developed to effectively use this PSG mode. In this proposed system, the AID audit trail would stop when the funds are deposited in the DTEC account, thus eliminating management intensive tracking of the funds. Regular RTG budgetary disbursement procedures are much more cumbersome than DTEC rules, and often make it difficult to implement development projects. It is very important that PSG funds move quickly to achieve program objectives within each implementing agency. The bottom line for AID is that an effective performance based monitoring and evaluation system must be in place in order to justify a MANRES Program Support Grant.

The Policy Agenda

The following Policy Agenda is illustrative, since the Policy Agenda and Benchmarks which will appear in the new MANRES PROGRAM will be the result of negotiations between AID and the RTG. These negotiations are the key to the amount of leverage that the PROGRAM will exert towards the attainment of its objectives. Since I don't anticipate new objectives, after reviewing both MANRES and The Five Year Plan, plus various RTG pronouncements, the benchmarks will focus on;

- (1) acceleration of implementation,
- (2) effectiveness of implementation and
- (3) pilot project implementation

The amount of AID funds allocated to support a policy agenda item will depend partially on how those funds can leverage the above three criteria and partially on the cost of the leveraging. Generally existing targets would equal zero under criteria (1). Unless, AID feels they are not implementable in the current environment, then criteria (2) would apply, and new implementation and enforcement measures would be given support. Criteria (3) would generally apply to U.S.-Thai Fund private sector projects or pilot conservation projects.

The following policy agenda is drawn from Part II - 6 (correspondingly numbered) and from the MANRES sub-projects, also identified. The co-mingled grant funds should go to agencies linked to achieving the benchmarks. These agencies are identified in Part II - 6 and the MANRES sub-project.

1. Reduction of industrial and mass transit air pollution. [A-5 and A-6 and Sub-Project 1]
2. Development of clean energy use. [A-8 and Sub-projects 1 and 3]

3. Urban Wastewater Treatment [A-2] and Solid and hazardous waste management [A-9] could be undertaken on a pilot basis in Phuket and Chiangmai respectively. [U.S.- Thai Fund]
4. Forest Zoning and conservation. [B-5 and Sub-project 2]
5. Coastal Land Use Planning [B-11 and Sub-Project 5] To be done on a pilot basis.
6. Mangrove and Coral Reef zoning, classification and demarcation. [B-8 and B-9 and Sub-projects 5 and 6]

Note : Limited support to IGAL could be linked to objectives 4 and 5 provided that Governors' take and active part, and that Line Ministry projects get scrutinized.

3. U.S. THAI DEVELOPMENT PARTNERSHIP FUND-PROPOSED TRANSACTIONS

The US - Thai Development Partnership Fund (DPF) and the accompanying Assistance Management Plan and Memorandum of Understanding clearly set forth a \$ 20 million transaction based program. Section D of the DPF contains several proposed transactions. The following two clearly fall within MANRES objectives, and could be funded under the re-started MANRES :

- o. Solid Waste Disposal and Wastewater Treatment Systems in Chiang Mai and Phuket
- o. Bangkok Sewerage System

Additional MANRES related transactions could include :

- o. Reduction and control of air pollution from private vehicles
- o. Reduction of air pollutants from public mass transit
- o. Reduction of industrial air pollution
- o. Air quality monitoring and enforcement
- o. Development of clean energy use technology

All of the above activities, and more are included in the proposed MANRES PSG Monitoring System (Part II - 6). These transaction with U.S. technical assistance and investment could be undertaken within the program and management system proposed in this Assessment.

In addition, to these potential transactions, consideration should be given to others, proposed in memos by Will Knowland.

4. JOINT PROGRAM STEERING COMMITTEE AND MANAGEMENT OPTIONS.

(a) The Joint Program Steering Committee

The Joint Program Steering Committee (JPSC) could be composed of; (1) the USAID Director, The DTEC Director General and the NESDB Secretary General, or alternatively (2), only the USAID Director and the DTEC Director General, with the NESDB Secretary General and the Bureau of the Budget (BOB) Director General serving in advisory roles. [Option (1) is an NESDB proposal, and option (2) comes from DTEC]. There are distinct advantages to option (2); annual allocation of program grants would be less cumbersome, and RTG budgetary support would be more forthcoming to support the MANRES policy agenda. Also Bureau of the Budget active involvement would contribute to Program sustainability after it's completion.^{1>} The NESDB role would be to coordinate policy and feasibility of implementation with the Line Ministries. After the MANRES PROGRAM Agreement is signed, the JPSC will (with support from its Monitoring and Evaluation Group, MEG) direct its implementation. The PROGRAM will include :

- (1) The Program Support Grant (PSG)
- (2) The Remaining Project Mode
- (3) The Human Resource Development
- (4) The Private Sector Transactions
- (5) The JPSC-MEG and Technical Assistance to support policy benchmark implementation.

1>. This is Khun Krisida's proposal. He also indicated that co-mingling of funds is desirable and that new disbursement regulations could be developed. The co-mingled funds (AID/DTEC/Other Donors) would serve as a supplement to the regular RTG budget. He has discussed this with the Bureau of the Budget already.

The JPSC will assess progress made in reaching program objectives, and determine annual funding support to implementing agencies. It's MEG will provide the staff work to assist the JPSC in reaching their determinations.

The MEG will be the administrative and research unit for the PROGRAM. Its functions will include :

- (1) Monitoring progress towards meeting PSG performance targets and reporting to the JPSC. (not input and outputs)
- (2) Mobilizing required technical assistance and other procurement, including that for the Private Sector Transactions component.
- (3) Assist in administering the Human Resource Development Program.
- (4) Assist in implementation of remaining project type activities.
- (5) Identify new areas for support to PROGRAM objectives
- (6) Assess performance of implementing agencies and report to the JPSC.
- (7) Produce a comprehensive annual report evaluating progress towards meeting selected environmental and natural resource objectives of the Seventh Five Year Plan and MANRES.
- (8) Perform staff work for the JPSC as required.

The MEG will be composed of the following :

- (1) Director - Senior U.S. environmental planner
- (2) Three Program Analysts
 - (a) Selected by USAID - a USDH
 - (b) Selected by NESDB [not under option (2)]
 - (c) Selected by DTEC

Note : In option (2), NESDB and BOB would provide part-time staff as observers.

- (3) Three Subject Matter Specialists
 - (a) Coastal Resource Management and Biological Resource Management

- (b) Industrial Environment and Rural Resource Management
- (c) Policy Analysis and Human Resource Development

Note : Or they could be more focused on the agreed to policy agenda.

- (4) Support staff
 - (a) Administrative Assistant/Secretary
 - (b) Typist/Receptionist
 - (c) Driver (s)

Office space, and equipment including communications and vehicles will be required. The total estimated annual cost is between \$250,000 - 300,000 utilizing the PSC route for procurement. Alternatively a somewhat more costly foundation or institutional grant contract arrangement could be selected.

The MEG should be located outside any RTG agency, so it will not be co-opted in its daily operations.

(b) The PSG Mechanism

A performance based program requires different skills in its management. In order to disburse funds in support of performance, that performance must be verified, also the economic and social benefits from the performance must be linked, and appropriate to the amount obligated. A functioning MEG outlined above will provide the necessary information to the USAID Director to make the obligation decisions.

The PSG mechanism would function in the following manner :

- (1) Annual obligations would be made to support pre-determined performance objectives and designated to implementing agencies; based on a 5 year Program Agreement.^{2>}

2>. For example, a first year disbursement could be based on an RTG action plan, say for Phuket. Subsequent disbursements would support its implementations.

- (2) An annual PIL would be issued to disburse the funds through the DTEC Counterpart Account to specified implementing agencies through the Bureau of the Budget's special procedures. The PIL would specify the performance targets, the specific amounts including non-AID funds to the agencies and the co-mingling formula.
- (3) The funds^{3>} would be initially disbursed into a special non-interest bearing account at the Bank of Thailand.
- (4) The JPSC with its MEG would monitor the performance of the implementing agencies and maintain a dialogue with them. Also Provide them with technical assistance when and where necessary to meet the targets.
- (5) The determination of each year's obligations and their distribution would be the proposal of the AID Director to the JPSC.
- (6) After the funds are disbursed to the implementing agencies, they would be managed according to agreed program objectives. They would be subject to oversight by the JPSC and to RTG audit.
- (7) The PSG support to the NESDB would be determined for the entire 5 year period initially, and not be negotiated each year since they are a members of the JPSC under option (1).
- (8) Both DTEC and NESDB had no objections to a "Negative List" which would contain catagories of procurement which would be prohibited from the PSG co-mingled funds. This list would include weapons, pesticides, luxury cars, palm oil promotion, etc. Such a list would ensure that US funds could not be used for such congressionally mandated prohibited categories.

(c) Other Management Options

There are several management options dealing mainly with fund allocations and implementation modes.

3>. The U.S. Regional Disbursement Office could purchase Baht on the market prior to each disbursement or the dollars could be disbursed directly.

Some MANRES activities may continue in the project mode-although my recommendation is that these be minimized. A "zero project" mode is the recommended option, with the only exceptions being the US/NGO's, FTI and possibly some pilot projects and the human resource development activities. Although this report contains some preliminary recommendations on this subject, a screening process could be established to determine the proportion.

There is also evidence that certain activities may no longer be needed and that some are not effective enough to warrant continued AID support. For example, the Public Awareness activities may not need further AID support because it has adequate support from other sources. Also the FTI may not be the appropriate implementing entity for the private sector activity. Also, if the recommendation to put the majority of the Project in a PSG mode is adopted, performance targets, rather than activities will be the criteria for obligations.

The potential transactions component outlined in Part II-3 will need to get a fund allocation, and a decision will have to be made whether to continue it as part of MANRES for the full 5 years of the program, or shift it to the US-Thai Fund when it comes on stream.

d) Illustrative Options

- (1) \$ 40 million (5 years)
- | | |
|------------------------------------|-----------|
| \$ 10 m.- Thai Fund | (5 years) |
| \$ 4 m.- Projects ^{4>} | (2 years) |
| \$ 4 m.- U.S./NGO's and HRD | (5 years) |
| \$ 22 m.- PROGRAM SUPPORT | (5 years) |
- (2) \$ 40 million (5 years)
- | | |
|-----------------------------|-----------|
| \$ 4 m.- Thai Fund | (2 years) |
| \$ 4 m.- U.S./NGO's and HRD | (5 years) |
| \$ 32 m.- PROGRAM SUPPORT | (5 years) |

4>. If a decision is made to continue some activities in the project mode.

5. RECOMMENDED NEXT STEPS

If the major recommendations of this report are accepted - this is a new PROGRAM and no longer the old MANRES Project. However, if it would be procedurally easier, the MANRES Project could be amended.

The first step is for the AID Director to discuss his new program concept with Khun Wanchai and later with Khun Phisit. Once agreement is reached on the new program concept, which I think already exists, the program must be designed jointly with RTG.

AID should field a MANRES PROGRAM design team. The most important part of their task will be to do the staff work, together with the RTG, to develop the policy agenda, benchmarks, and pilot projects that would be linked to obligation of funds. Getting final agreement on this can be a long and complex process. For AID, its straightforward, the AID Director makes the final decision, on the RTG side, the process will involve DTEC, NESDB, BOB and the line ministries.

The design of Program implementation modalities will need to be very precise to cover, not only the AID audit requirements but also reflect AID/W and Congressional concerns and objectives.

6. A MONITORING SYSTEM FOR TRACKING MANRES PERFORMANCE AND ILLUSTRATIVE PERFORMANCE TARGETS

(a) Introduction

A Program Support Grant (PSG) can be used to reduce the management workload and accelerate the future funding of many RTG environment and natural resources management (E/NRM) activities originally assisted by the MANRES project. MANRES PSG obligations, after an initial agreement is signed, will be keyed to the RTG's rate of progress towards achieving a set of MANRES E/NRM performance targets. Standard USAID monitoring of project input and output management will no longer be required in a MANRES PSG mode.

Effective implementation of MANRES activities under a Program Support Grant requires a system for monitoring performance in achieving agreed targets. The Environment and Natural Resources Management Components of

the RTG's Seventh Five-Year Plan provide both a strategic framework for determining the activities to receive MANRES PSG assistance and a range of E/NRM objectives and targets that can be elaborated and used to track RTG performance under a MANRES PSG agreement.

Based on a common set of Plan and MANRES project activities, this section outlines a monitoring system to track performance of PSG - funded activities. Part (b) of this section outlines the broad framework of the MANRES PSG monitoring system. Part (d) lists illustrative targets for use in MANRES PSG tracking. Also listed are the related indicators of progress toward achieving each MANRES PSG target.

The proposed MANRES PSG Monitoring System is designed to respond to anticipated limited future management resources in the Mission. MANRES activities, targets and indicators are all formatted for the ease with which they can be tracked over the life of the project.

The Program Support Grant mode for MANRES activities responds directly to the USAID Mission's objectives for reducing the management requirements of its development assistance portfolio. The monitoring system for the MANRES PSG assistance is a minimum management approach to Mission oversight of its support for the RTG's environment and natural resources management efforts. Potentially, the monitoring and evaluation system proposed here might serve as a model for tracking the performance of other components of the USAID development assistance program for Thailand.

(b) MANRES PSG Performance Monitoring system

Background. The Original MANRES design called for multi-agency monitoring and evaluation at the input, output and purpose levels of project activity. It also placed considerable monitoring burden on USAID Mission staff. The MANRES design called for the creation of a full-time monitoring and evaluation (M & E) specialist position to be staffed for at least the first full year of the project. The M & E specialist was to be contracted to set up this monitoring system and oversee initial reporting to project managers and decision-makers.

The project monitoring specialist position was never filled and MANRES tracking was limited largely to reviews of

participating agencies' annual reports and plans. It appears that much USAID Mission staff time was consumed in verifying the actual expenditures on project inputs and their related project outputs. Mission and RTG agency project tracking demands at the input and output levels, without adequate staff, appear to have detracted from overall project direction.

The Mission's Assistance Management Plan (AMP) for Thailand seeks to set up control and oversight mechanisms that free available staff from the input and output level tracking that was envisioned in the original MANRES design. At the same time, the Mission seeks an assistance mode that allows it to be responsive to the range of environment and natural resources management problems that are recognized constraints to sustainable economic growth. A Program Support Grant (PSG) mode is one vehicle for providing E/NRM assistance under limited management constraints. Required under a PSG assistance mode, however, are a clear set of performance targets and a system for monitoring and evaluating progress of Thai implementing agencies in achieving them. Monitoring progress in achieving performance targets --- as opposed to progress in the implementation process --- allows for a more limited mission management role which preserving accountability. Participating RTG agencies would receive future MANRES RTG support on the basis of achieving agreed performance targets not on how they manage implementation tasks.

The monitoring system outlined here involves three components:

- o A list of performance targets and indicators to be incorporated into the PSG agreement. (These targets and indicators are detailed in Part (d) of this section).
- o Participating agencies responsible for collecting, compiling and reporting information on the indicators of progress toward agreed targets, and a decision-making body that determines resource allocations based on these performance reports.
- o A schedule for reporting performance indicators and for determining MANRES PSG allocations.

Participating agencies A monitoring and evaluation system for the MANRES PSG will require the participation of three groups of agencies :

1. The agencies responsible for implementing specific activities supported by MANRES;

2. an agency, or entity to coordinate the verification and reporting of the performance indicators; and,
3. those agencies, working through an executive committee which will decide the allocation of MANRES resources on the basis of progress toward achieving agreed targets.

The AID Mission and RTG should determine the institutions to participate in the MANRES PSG monitoring at the time the PSG agreement is prepared and specific E/NRM Plan activities are identified for funding. The following are recommended functions of each of the participating agencies :

Implementing agencies. The implementing agencies mainly will be from the Thai government or university and NGO community and have assigned activities under the MANRES PSG. In addition these agencies' monitoring and evaluation responsibilities would include:

- o proposing performance targets and respective indicators to be included in the PSG agreement or to be introduced during future revisions of MANRES PSG funded activities;
- o collecting and compiling the data measuring performance indicators;
- o reporting performance indicators to the coordinating agency according to an agreed schedule. (If more than one agency is involved in an activity, these measurement, collection and compilation functions can be delegated to as agreed.)

Coordinating agency. The coordinating agency or entity will be the MEG to the Joint Program Steering committee (JPSC). It should be responsible for:

- o identifying the appropriate indicators to be used for measuring progress toward achievement of targets;
- o verifying accuracy of performance indicators reported by the implementing agencies;
- o setting schedules for reporting of performance indicators by the implementing agencies;
- o reporting non-compliance with indicator reporting schedules to the MANRES Joint Program Steering Committee (JPSC).

Executive Committee. Options for Participant agencies in the MANRES Joint Program Steering Committee (JPSC) are outlined in Part II - 4. Responsibilities of the executive committee will include :

- o reviewing MANRES PSG activity performance monitoring reports for completeness and accuracy;
- o directing the coordinating agency on any changes in MANRES PSG funded activities, targets or indicators;
- o approving recommended targets and their respective indicators;
- o approving annual MANRES PSG obligations on the basis of performance monitoring reports.

The JPSC MEG will perform the staff work to enable the principals of the JPSC to make decisions.

(c) Monitoring Schedule

The measurement and reporting of performance indicators is very time critical. A reasonable schedule for all participating agencies must be developed and adhered to. Delays in meeting deadlines for submission of monitoring reports by one agency should not preclude other agencies from continuing to receive funding for activities that merit continued support. Given A.I.D. funding and disbursement procedures, performance indicators must be reported as much as six months in advance of when funds for the new year of activities would be needed. Within the fiscal year schedules of both the USG and the RTG, performance indicators will be needed for review and funding allocations in June in order to have funds available for use by December.

The MANRES JPSC will have one regularly scheduled annual meeting with additional sessions as needed. The actual schedule for submissions by implementing agencies will be determined during development of the PSG agreement and will be overseen by the coordinating entity which will function in the role of the MEG to the MANRES JPSC.

(d) Illustrative MANRES Performance Targets and Indicators

Special attention must be given to selecting E/NRM targets and indicators to be used in MANRES PSG performance tracking. Performance targets must be relevant to MANRES and Plan objectives and to the specific activities that they will be used to track. But that is not all. Performance targets and their indicators must also meet the following selection criteria :

- o Can targets be measured with a reasonable degree of accuracy and clarity ? Plan targets that call for "improving", "supporting" and "encouraging" E/NRM changes are too subjective and vague to quantify and unacceptable for performance tracking. Targets that are date-specific events (e.g., policies adopted, legislation passed, or new implementing agencies created) lend themselves to easy tracking and verification: the indicator is the date the "event" occurs. Targets with quantifiable indicators (e.g., amounts of new budget allocations, area of forests effected, number of community action groups formed) also lend themselves to accurate and verifiable measurement.
- o Can targets be measured within a reasonable time period and in a cost effective fashion ? Plan targets such as poverty alleviation, income redistribution or increases in agricultural productivity would require too many resources and too much time to be practical for MANRES PSG performance tracking. Specific targets such as areas of land effected, numbers or amounts of private E/NRM investments, however, can be monitored and reported within the time and budget constraints of the MANRES PSG.

The activities, targets and indicators listed below were developed during October 1991 by assessment team members working with NESDB Environment and Natural Resources staffs. The targets and indicators for tracking MANRES supported activities are drawn from the RTG's Seventh Five Year Plan (1992-1996). The targets are selected only for those Plan activities to which MANRES currently provides some support. As E/NRM activities evolve over the Plan period, new MANRES supported activities and performance targets can be added and old ones dropped in the course of JPSC's dialogue and consultations.

Therefore, the following list should be viewed at this stage as illustrative and preliminary. It is neither comprehensive nor complete. The list is based on a very

early comparative analysis of E/NRM objectives common to the Five Year Plan and to MANRES at this time. The final listing will be determined during preparation and negotiation of the MANRES PSG agreement.

A. Environmental Program

1. Environmental Auditing System to calculate the social costs of environmental damage caused by polluters

Targets : - Auditing System developed
 - Auditing System approved for implementation
 - Auditing System budgeted, staffed, equipped and operating
 - First auditing reports prepared and released

Indicators : Dates above events occur

Implementing Agencies : NESDB and ONEB

2. Urban wastewater treatment systems in Bangkok and in other priority areas of the country

Targets : - Feasibility and engineering design studies conducted
 - Investment plans for priority areas approved
 - Public sector investment resources allocated
 - Joint Ventures with private firms signed
 - First treatment plants begin operation
 - Feasibility studies for other priority areas completed

Indicators : Dates the above events occur

Implementing Agencies : NESDB, MOI Department of Industrial Works

3. Land use zoning for animal and aquaculture farms

Targets : - Land use surveys conducted
 - Land use zoning maps developed and approved
 - Livestock firms relocated to approved zones or fees assessed for operators in zones

Indicators : Dates above events occur

Implementing Agencies : NEB

4. Reduction and control of air pollution from private vehicles

Targets : - Establish standards for vehicle emissions
 - Private firms registered for vehicle emissions inspections
 - Govt monitoring units equipped and operating
 - Reduction of lead content in gasoline
 - Reduction of sulfur content in diesel fuel

Indicators : Dates events occur, numbers of firms registered and monitoring units operating, levels of lead and sulfur in gasoline and diesel fuels sold

Implementing Agencies : ONEB, NEPO, BMA, Department of Land Transport, Oil refining plants

5. Reduction in air pollutants from public mass transit

Targets : - Budget allocations for new equipment purchases
 - Percentage of new buses with emissions controls in circulation
 - Reduction in sulfur content of diesel

Indicators : Amounts of money allocated, number of buses circulating and level of sulfur content in diesel fuels used

Implementing Agencies : ONEB, BMA and the BMTA

6. Reduction of industrial air pollution

Targets : - Industrial emission standards established/approved
 - Budget resources allocated for inspection
 - Monitoring equipment purchased and manpower hired and trained
 - Schedule of fines and penalties approved for violators
 - Fines and penalties issued to violators

Indicators : Amounts of money, equipment, staff and "pollution payments" from violators and dates events occur

Implementing Agencies : ONEB, MOI and DIW

7. Air quality monitoring and enforcement

Targets : - Increased budget allocations for monitoring
 - Monitoring equipment purchased and installed
 - Reports on air quality prepared and released
 - Lower levels of air pollutants registered

Indicators : Dates events occur, amounts of money and equipment made available, recorded levels of air pollutants

Implementing Agencies : NEB

8. Development of clean energy use

Targets : - Feasibility studies prepared
- Investments made using clean energy technology

Indicators : Dates and numbers of feasibility studies prepared, amounts and types of clean energy investments made, share of clean energy use in total energy consumption

Implementing Agencies : NESDB

9. Solid and hazardous waste management

Targets : - Appropriate technology studies for waste reduction, recycling and resource recovery and for substitution of non-toxic substances
- Local government waste management plans, systems and operations in place
- Public education program launched for waste separation and disposal
- Industrial investments made in hazardous waste disposal
- Accident prevention plans adopted for hazardous waste handling

Indicators : Dates events occur and amounts of resources, trained staff and equipment allocated to operations, enforcement and publicity, numbers of plans and investments made

Implementing Agencies : NESDB, ONEB, DIW, BMA, MOI and local governments

B. Natural Resources Management Program

1. Provincial Natural Resources (GIS-based) Information System

Targets : - Operating plan and guidelines
- Pilot provincial activity
- Periodic up-dates and additions to GIS maps
- Periodic reports for policy-makers

Indicators : Dates of events and numbers of maps and reports prepared and distributed

Implementing Agencies : NESDB, provincial governments and Min of Sci, and Tech.

2. Land Resources Management Information System

Targets : - Up-date data collected and compiled
 - Reports prepared and distributed to policy makers

Indicators : Dates of events and numbers of reports prepared

Implementing Agencies : MOA Land Development Department

3. Soil and Water Development Villages

Targets : - Villages formed and functioning
 - Soil/Water management system developed and introduced
 - Cropland incorporated into soil / water management systems

Indicators : Number of villages formed, dates systems introduced, number of rai of cropland incorporated into systems

Implementing Agencies : MOA Land Development Department

4. National Park and Wildlife Sanctuary Planning

Targets : - Master Management Plan
 - Individual sanctuary annual operating plans
 - Budget resources allocated for plan implementation
 - Equipment and trained staff in place for plan implementation

Indicators : Date Master Plan and operating plans are prepared, approved and released and amount of money, equipment and staff made available for plan implementation

Implementing Agencies : RFD, NRC and Universities

5. Watershed rehabilitation

Targets : - Watershed demarcations completed
 - Pilot rehabilitation scheme prepared and approved
 - Subsequent schemes prepared and approved
 - Areas (rai) rehabilitated according to plan targets

Indicators : Dates events occur and amount of area rehabilitated

Implementing Agencies : RFD

6. Conservation forest zoning and demarcation

Targets : - Zoning and boundary maps completed
 - Areas demarcated

Indicators : Dates maps are prepared and amounts of forest demarcated

Implementing Agencies : RID and LDD

7. Community forests

Targets : - Community forest law launched
 - Community forests demarcated and created

Indicators : Date law is launched and number and area of forests

Implementing Agencies : RFD and provincial administrations

8. River Basin Master Planning

Targets : - 25 Master Plans developed and approved
 - Money, equipment and trained staff allocated

Indicators : Number and dates plans are approved and amounts of money, equipment and staff allocated

Implementing Agencies : Royal Irrigation Dept. and NWR Committee

9. Mangrove Forest Zoning and Demarcation

Targets : - Master zoning and demarcation plan developed
 - Money, staff and equipment allocated
 - Zoning and boundary maps completed
 - Areas demarcated

Indicators : Dates maps are prepared and amounts of forest demarcated

Implementing Agencies : ONEB, RFD, Fisheries Department

10. Coral reef zone classification and demarcation

Targets : - Master Zoning and demarcation plan developed
 - Money, trained staff and equipment allocated
 - Zoning maps prepared and approved
 - Demarcation work completed

Indicators : Dates plans and maps completed and area demarcated

Implementing Agencies : ONEB, Fisheries Department

11. National Marine Parks Planning

Targets : - Master Development Plan developed and approved
- Money, trained staff and equipment allocated for plan implementation

Indicators : Date plan completed and amounts of money, staff and equipment allocated

Implementing Agencies : ONEB, Universities and Fisheries Dept.

12. Coastal land use planning

Targets : - Master Plan developed and approved
- Money, trained staff and equipment allocated
- Enforcement actions taken

Indicators : Date plan approved, amounts of money, staff and equipment and number and type of enforcement actions taken

Implementing Agencies : ONEB, LDD and Fisheries Dept.

13. Mineral resources planning

Targets : - Minerals production and use plan
- Money, equipment and trained staff allocated
- Minerals Research Center created
- Mineral zoning maps developed
- Demarcation of mineral zones

Indicators : Dates plan and center created, amounts of money, equipment and staff allocated, zoning maps produced, areas demarcated

Implementing Agencies : Dept. of Mineral Resources, NESDB, NRC, ONEB and forestry Department

14. Mining area rehabilitation

Targets : - Legislation enacted
- Rehabilitation plan developed
- Money, trained staff and equipment allocated
- Private investment scheme developed
- Joint ventures approved
- Area (rai) rehabilitated

Indicators : Dates event occur, amounts of money, equipment and staff allocated or invested and area rehabilitated according to plan targets

Implementing Agencies : Dept. of Mineral Resources, NESDB, ONEB, Dept. of Forestry

PART III ASSESSMENT OF PAST ACTIVITIES
AND
RECOMMENDATIONS

1. INDUSTRIAL ENVIRONMENTAL MANAGEMENT SUBPROJECTS

(a) Background and Status

A cooperative agreement with FTI has been established to plan and carry out an industrial environmental management agenda over the 1990 - 1995 period, Initial USAID grant funds will support Phase I (FY 1990 - 1992) of the Industrial Environmental Management Program. An evaluation will be conducted in mid FY 1992 to determine the scope of work and funding for activities during Phase II (FY 1993 - 1995). The total estimated amount of the Agreement is Baht 75,000,000 and obligated amount for program expenditures during Phase I is Baht 33,750,000. The three major elements of this subproject are : (1) Technical and Administrative Group Development, (2) Environmental Awareness in Industry, and (3) Cooperative Technical Assistance. As of August 31, 1991, the total subproject obligation was \$1,921,000 of which \$1,690,070 was committed, \$383,233 disbursed, and \$1,537,767 unexpended.

Since the start of the subproject some progress has been made. A reference library, for example, has been set up. Seminars have been organized and weekly T.V. programs have been aired. Reports on problem identification on waste water treatment are completed and industry survey conducted. Nevertheless, in all, project implementation has been slow.

(b) Recommendations

- o All three elements of the subproject should be continued. However, the order of priorities should be as follows:

- (1) Cooperative Technical Assistance
- (2) Technical and Administrative Group Development
- (3) Environmental Awareness in Industry

- o The Cooperative Technical Assistance element will provide FTI an opportunity to work with the World Environment Center (which now has a Cooperative Agreement with USAID to, among other things, provide technical assistance to FTI) in the areas of industrial pollution control, toxic and hazardous waste management, and worker's health and safety. One of the major activities of this element will be Environmental Pollution Prevention and Control in the Thai Textile Industry which is of particular importance in Thailand.
- o The Technical and Administrative Group Development is also essential for the effective implementation of the subproject. The ability of professional staff of FTI to assist the Thai industries on environmental matters is crucial to the subproject's success. Support services like library facilities and the data base must also be adequately provided.
- o The Environmental Awareness in Industry. Although quite important, requires new directions and approaches. The project must focus on industries and their effects on the environment. In recent years awareness campaigns on environment have been intensified by various agencies including the private sector. The problem now appears not to be the awareness but more of the willingness to act and of the effective enforcement of laws and regulations.
- o The amount of the grant already obligated under the Agreement should continue to support the three elements in accordance with their priorities. This will cover the period of Phase I (FY 1990 - 1992). The results of the evaluation in 1992 would be used to determine what activities should be funded using any remaining initial funds. Additional MANRES funds would be subject to careful assessment of subproject performance and objectives.
- o Only short-term training should be provided to the professional staff, using the funds already obligated to the subproject.
- o The slow progress of the Subproject has been of considerable concern to both USAID officers and some FTI executives. In this regard, FTI needs to focus its program on selected priorities as already indicated in its annual work plans. A monitoring system within the FTI itself should be designed and used for improved efficiency in project implementation. Furthermore, it should also plan for carrying out on its own after this USAID Funded project is completed.

2. RURAL RESOURCES MANAGEMENT SUBPROJECTS

(a) Background and Status

The three elements of the RRM are: Provincial Natural Resources Planning and Management, the institute for Government Administration and Local Government (IGALD) Training Program, and Rural Resources Technical Support and Training. The total estimated budget for the subproject is \$5,679,000. The total obligated amount as of August 31, 1991 was \$2,786,000, of which \$2,365,906 was committed, \$601,356 disbursed and \$2,384,644 unexpended. From the total obligated amount, the unexpended amounts for Elements 1 to 3 are \$1,142,525, \$442,949 and \$144,755 respectively.

Measurable progress has been made, particularly in regard to Elements 1 and 2, Committees at the provincial and district levels have been set up. Seminars and meetings among official at all levels have been organized. In 1990 and 1991, a government budget of Baht 15 million was allocated for provincial natural resources management. In 1992, a total budget of Baht 6,000 million has been earmarked for development activities at the provincial level. Under this subproject, support will go to three types of activities : namely water, employment generation, and environmental resource management. Each province can propose local projects and the government can now decided which local projects are carried out. It is expected that several local environment and natural resource management projects will be implemented under this subproject.

Achievements so far include: case studies on natural resources and environment (for use in training courses), seminars organized for various groups of government officials and officers of municipalities and sanitary districts, curricula development and preparations of provincial plans for natural resource management and development. In 1990, provincial plans were prepared for 42 provinces. This will increase to 66 provinces in 1991. In addition, handbooks for resource management and environment at the provincial, district, tambol and village levels have been prepared and are being revised. These handbooks will be published in 6,000 copies for provinces and districts and 60,000 copies for tambols and villages.

It is clear that the Ministry of Interior has taken the national objectives of natural resources management and environment improvement very seriously, and numerous activities in this areas will be carried out at local levels. However, this change in emphasis of the development program has also raised questions and concern regarding the capacity of the provincial and local governments to effectively handle these activities. The existing capacity is clearly limited and is in need of improvement. In this regard, regional universities and institutions have an important role to play.

(b) Recommendations

- o All three elements should continue. Top priority is to be given to Element 1 so as to enable the Office of Policy and Planning (OPP) to carry out its activities effectively. This should contribute significantly to the success of the current national policy and programs at provincial and local levels. OPP should also work closely with IGALD to make sure that IGALD's activities effectively support OPP's works. The core activities are training, demonstration, planning, and extension including the dissemination of information.
- o Elements 3 which involves the technical support services of regional universities and institutions should also be continued. This is considered necessary for strengthening the capability of the provincial and district staff who are directly responsible for the planning and the management of natural resources and development. From an interview with some officers at regional universities and institutions, they are prepared and willing to work with the provincial staff. Part of the role of these institutions is to provide technical services to the communities. Cooperation between these two types of agencies should be encouraged as it will contribute to national development in the long-run.
- o The unexpended amount of funds (from that already obligated) should be sufficient for the subproject. Each Element should receive its own unexpended amount. Since the remaining funds for Element 3 are rather small (\$144,755) compared to its scope of work, either more funds should be allocated to this Element or the Project must come up with an approach which can best utilize the limited funds. Regional universities should play an important role in provincial natural resources management with some cooperation from regional and extension institutions.

- o The need for staff development is real for IGALD, OPP, provincial and district offices, and regional universities. It is not possible to assess such a need for the subproject. However, special attention should be given to the need of IGALD and OPP. At both places, Ph.D. training is required for 2 to 3 officers and about 10 persons for master degrees. Short-term training is also important. These people can attend universities, both local and overseas. At present, local university namely Chulalongkorn, Kasetsart and Mahidol have M.S. and Ph.D. programs in natural resources management and environment. Their programs are designed particularly for Thai students.

3. POLICY ANALYSIS AND DEVELOPMENT SUBPROJECTS

(a) Background and Status

Natural resources management and environmental protection are now major policy objectives to the Seventh National Plan. The need for new policy direction of natural resource management and environmental protection has become clearer than before. It is also expected that a greater effort will be made by the government to achieve the specified targets as indicated in the Plan. In this connection, there is an increasing need for policy research to guide resource allocation and management over the long term and to identify policy incentives and adjustments necessary for sustainable development. Therefore this subproject is of particular importance.

Three elements of the subproject are: (1) Strengthening the National Support Capacity at NESDB ONEB, (2) Prospective Policy Research at TDRI; and (3) Policy Information Dissemination. The total estimated budget is \$5,315,000 as of August 31, 1991, the total obligated budget was \$4,618,986, of which \$4,327,493 was committed. \$3,149,622 disbursed and \$149,364 unexpended. Of the total unexpended amount of \$3,149,364, \$1,666,742 is under Element 1 (NESDB and ONEB), \$1,479,600 under Element 2 (TDRI), and only \$3,022 under Element 3.

Under Element 1, various activities have been undertaken by NESDB and NEB. Several workshops and seminars were organized. Assessment and preparation of a planning framework for national disaster prevention and mitigation and resource restoration in the South was carried out. A review was made of natural

environmental impact assessment procedures. A study was also conducted on the reorganization and decentralization options for ONEB with a proposal to the cabinet.

Considerable achievements also have been witnessed under Element 2. With MANRES support, TDRI has been able to undertake policy research which led to the significant and timely 1990 End-Of-Year Conference on Thailand's Environmental Management. In this connection, the contribution from the collaborative work between TDRI and HIID must be noted. It is quite clear that results from TDRI studies have been useful for policy formation and planning of the Seventh Plan.

Element 3 has been less significant than the other two. The main achievement has been related to the flood disaster in the South.

(b) Recommendations

- o Only Elements 1 and 2 deserve continuation. Activities of Element 3 can be incorporated into either Element 1 or Element 2. Although NESDB or ONEB may logically be an implementing agency for information dissemination, particularly the publication of a journal on natural resources and environment, it does not now have the capacity. This is also true of the case of TDRI. It is recommended that Element 3 activities be carried out by the three major agencies namely NESDB, ONEB, and TDRI.
- o Project activities under ONEB should continue to focus on pollution control policies and demonstration, e.g., management of water quality, air quality, toxic substance and solid hazardous waste, natural resources policy and coordination, e.g., coastal resources and watershed classification management and development of environmental administration program, e.g., information system and environmental impact assessment. Other activities of relevance include: i) studies on a legal framework for environmental protection and on management of an environment fund, ii) demonstration projects on regional solid waste disposal facilities and on greenery urban development. However, some of the demonstration projects involve a large amount of investment which may not be appropriate under MANRES. The NESDB is interested in undertaking a variety of activities under MANRES. These activities, as is envisaged will help achieve some of the major targets of the Seventh Plan.

- o The project activities that merit funding include, community forest management, public park management, natural resources restoration, urban environmental planning system, modern agricultural technologies and environment, feasibility of protection of agricultural lands, and the impact of economic structural change on the agricultural sector. Some of these activities are pilot projects (e.g., community forest management) and some are research studies. The cost per project will therefore vary considerably.
- o The TDRI activities should continue as originally designed. The Natural Resources and Environment Program intends to continue its research on major policy issues of the Seventh Plan. The collaborative arrangement with HIID should also continue as it is considered very productive. Researchers from HIID are relatively more experienced and very well-trained compared to their Thai counterparts. Hence, for many Thai researchers at TDRI, working with HIID staff is like on-the-job training. Furthermore, it can be expected that the problems and issues of natural resources and environment will become even more complex and serious in Thailand. This will need experienced analysis. The services of HIID staff, therefore, are required at least in the next 3-5 years.
- o Out of the total estimated budget of \$5,315,000 for the whole Subproject, about 87% has already been obligated and \$4,327,493 committed. Considering that the Subproject activities are essential to the achievement of the targets on natural resources and environment of the Seventh Plan, funding for Element 1 and 2 should remain at the original amounts, i.e. \$1,990,000 for Element 1 and \$3,005,000 for Element 2. These funds to NESDB, ONEB, and TDRI are also to be used for activities of Element 3.
- o All three implementing agencies need of staff development for effective implementation of their activities. First, short-term training in theory and concept, research methodology and practices. This kind of training can be specially organized by local universities and institutions. Second, long-term training should be provided to young Staff members with good potential and good academic background. There is also need for well-trained resource and environmental economists at both NESDB and ONEB. Without a careful and systematic staff development, the strengthening of policy analysis and development of these two important agencies will not be possible. However, it is not possible here to specify here the number of persons, the type and the level of training required by each agency.

- o In this connection, realizing that training takes time and the implementation of the project activities cannot wait, these agencies can resort to acquiring technical assistance services, particularly from local sources. This should now be feasible as there are a good number of well-trained and experienced local people working in both public (e.g. universities) and private sectors. However, an appropriate arrangement needs to be made to make the available services as productive as possible.

4. ENVIRONMENTAL AWARENESS AND EDUCATION SUBPROJECTS

(a) Background and Status

This subproject, with a LOP funding of \$3.7 million, has two elements: National Environmental Education; and Public Environmental Awareness.

The National Environmental Education element was conducted by the Ministry of Education, culmination in the recent draft Master Plan on Environmental Education for 1991 - 1996. The MOE is working to get this plan incorporated into the RTG 7th 5 year plan, which is likely. To the MOE's credit, they worked very hard to achieve consensus throughout their large and unwieldy beaurocracy in developing the plan. This has been a slow process, but the plan is very impressive. Although some aspect of environmental education has been in the schools since the 1970's (as population education), MANRES was successful in dramatically moving the process forward. Now is the time to reap the benefits of the MANRES effort by helping the Thais to implement the master plan.

	Committed	Expended	Balance
1. Workshops	\$27,038	\$27,038	0
2. Curriculum and Material	\$10,828	\$10,828	0
3. Master Plan	\$277,466	\$107,226	\$170,200
4. U.S. Study Tour 9/90	\$60,755	\$31,755	\$29,000

Note : The draft master plan now needs to be published and disseminated. This is what the \$ 170,200 would be used for. The expenses from the completed U.S. Study tour need to be paid.

The Public Environmental Awareness element was designed to increase the capacities of NGOs in environmental education, but this element never got off the ground. No NGOs have yet received money under this element. Instead, ONEB received \$ 136,047 for its public awareness activities. NGOs are critical actors in ensuring public advocacy and participation. Given the importance of NGOs, MANRES should once again take up this effort; as suggested below, this can be done with little management effort.

	Committed	Expended	Balance
1. (1989)	\$67,917	\$49,767	\$18,150
2. (1990)	\$130,447	\$60,350	\$70,097
3. (1991)	\$52,800		\$52,800

Note : For FY 90, outputs including trained staff, environmental protection campaigns, publication of environmental cartoon, etc.

(b) Recommendations

- o Give \$2.7 million (80% of amount left over after honoring commitments) to MOE as a cash transfer to execute their master plan. The plan consists of 5 parts. I would recommend that the money go into 3 of the elements, if possible: 1) human resource development; 2) campaign and information dissemination; and 3) development of the learning-teaching process, particularly the development of materials and activities on Environmental Education. This recommendation corresponds to what, the MOE freely admits, the RTG is less likely to fund. The money should be obligated if progress towards certain indicators is satisfactory.
- o \$670,000 (20% of amount left over) should go to NGOs for public awareness campaigns. To eliminate the AID/Thailand management burden, this money could be given to an umbrella organization for distribution to appropriate NGOs. Recommended groups are PACT or the Asia Foundation or alternatively, the Biodiversity Support Program.

5. COASTAL RESOURCES MANAGEMENT SUBPROJECTS

a) Background and Status

This subproject with LOP funding of 5.658 million has a complicated history. By 1989, the subproject was dropped, largely to satisfy complaints that MANRES was too complicated (and perhaps also because the S&T CRMP project was ongoing), with one element (policy) to be incorporated in the PAD subproject, and another (establishment of CORIN) in the RRM subproject. The decision to drop this element was made before any conclusions were drawn from the CRMP project (S&T) and the ASEAN CRMP Project. The S&T project has resulted in the completion of a number of strategies and action plans (Phuket Action Plan; Marine Park Management Plan; a National Framework for Coastal Management; and a National Coral Reef Management Strategy) and a number of policies being adopted by the Cabinet.

CORIN was begun in 1989 at the Prince of Songkla University. Major outputs to date have been an ecological profile of Pak Phanang (which has an urban component), a workshop in Pak Phanang involving NGOs, and involvement in assessing the Phibun flooding disaster and deriving a disaster management plan. Indications are that the Phibun disaster plan is a tour de force and will receive much notice. Given CORIN's outputs, there is little doubt that this institute will be sustainable after it is strengthened.

Further evidence of CORIN's sustainability and initiative include the current planning of a self-supporting international conference on coastal resource management for April 1992. PSU's strength is that it has good links with the community and is easily able to work with the local people in analyzing problems and deriving solutions. Thus by strengthening CORIN, AID can help to establish links between provincial planners, the community, and the university. Through the cooperative agreement with URI, there should be little management burden.

b) Recommendations

- o In general, the coastal resources component should be comprised of two elements: (1) assisting the RTG in implementing the provincial action plan for Phuket and its surrounding islands; and (2) strengthening CORIN. The arguments for supporting each of these are provided below. Both will require resources for the full life of the MANRES Project.

- o Follow through with the successful CRMP project. This will be able to demonstrate project impact. AID's coastal efforts in Thailand will thus have proceeded all the way from initial strategies to implementation.
- o Focus CRM assistance in one area to have a greater effect.
- o Focus on one province, the type of approach exemplified in MANRES can be tested. If integrated efforts are continued in this manner within smaller spatial limits, MANRES will prove to be the revolutionary innovative approach that many thought it was.
- o Assist the RTG in implementation of these plans to increase the synergy of mission efforts. The PID of the U.S.-Thai Development Partnership Fund proposes to work with U.S. partners in developing possible transactions in solid waste disposal and wastewater treatment in Phuket. Thus both the MANRES project and the U.S.-Thai Development Partnership Fund will focus their environmental resources in one area. The objectives of RRM - to strengthen provincial planning - will be realized by implementing this plan. This pilot project will be a model for provincial planning in other provinces. The current provincial governor is sympathetic and interested in pursuing environmental efforts in Phuket.
- o Develop a strong coastal resources institute such as CORIN in Thailand, to ensure the sustainability of sound coastal resource management. Although only 14% of the land area of Thailand, the South contains more than 70% of Thailand's coastal resources. Since Prince of Songkla University (PSU) is the only university in all of South Thailand, it makes sense to help develop a coastal institute there. PSU has three branches, one in Hat Yai, one in Phuket, and one in Suratthani province. This means that AID's efforts will have a multiplier effect; CORIN will be able to access faculty from three campuses, as well as have a good relationship with three coastal communities.
- o Honor earlier commitments to CORIN and URI (total \$553,098 - \$273,165 is part of the cooperative agreement between URI/AID; \$279,933, is part of the MOU between DTEC/PSU/AID/URI). There is an additional \$1,000,000 in human resource development obligated for training for CORIN that needs to be honored.

- o Transfer \$702,000,000 of Coastal Resource money to RRM to support the obligation to CORIN (includes prior expenditures of \$134,819 made under RRM). This is under the URI Cooperative Agreement.
- o Give \$2,000,000 as a cash transfer to RTG to implement the Phuket Action Plan and the Ko Phi Phi National Park Management Plan through 1995. The Phuket Action Plan includes 12 policies. Based on U.S. expertise and Thai government interest (as noted above), a cash transfer could be used to implement policies on coral reefs, monitoring of water quality, training for the tourism industry, public awareness (particularly Policy 2 to strengthen local involvement in decision-making), and land use planning. (Note: this list is largely the same as the recommendation made by CRMP project).
- o Contribute \$1,000,000 under the cooperative agreement to URI over the next three years to assist the RTG in implementation of the above plans. This would be part of the CRMP regional outreach component - specifically, applying and refining CRM approaches and techniques, as described in the 1990 DRMP project paper supplement.
- o Encourage CORIN associates to get involved with analyzing the progress in the Phuket implementation plan. This will enable the institute to learn the mistakes and successes of management plans in action.
- o Encourage CORIN to maintain closer relationships with the faculty of PSU. Work to ensure that the already established CORIN executive committee (composed of the CORIN director and the deans of faculty from 4 divisions, among others) create CORIN's work plan.

6. BIOLOGICAL RESOURCE MANAGEMENT SUBPROJECTS

(a) Background and Status

This subcomponent originally had three elements in the PID: protected areas planning and management; biological diversity research and conservation; and community forestry. The last element -- probably the most important in terms of its impact on biological diversity - was dropped in the PP. Although the outputs of the BRM component were worthy, they were diffuse. Most importantly, this subcomponent needs to have more impact than currently designed, for we are fighting a race against time before most of the rich biodiversity in Thailand is lost irreversibly.

(b) Recommendations

- o In order to have greater impact, I recommend that almost all of the biological resources funds go towards conservation efforts in the Huay Kha Khaeng/Thung Yai Naresuan Wildlife Sanctuary. This area is one of the largest wildlife sanctuaries in SE Asia. The IUCN calls the HKK/TYN Wildlife Sanctuary the most important protected areas in SE Asia. The HKK/TYN Wildlife Sanctuary is currently being considered one of the World's national Heritage Sites.
- o Efforts should include: demarcation of the wildlife sanctuary boundaries; buffer zone management to improve the socioeconomic development of communities in these zones; public awareness, research of the plants in HKK; strengthening RFD park staff in wildlife management techniques and interpretive (educational) efforts. MANRES is currently already supporting a large number of these elements, however in areas spread throughout Thailand.
- o Provide an additional \$3.5 million buy-in through the AID/W Biodiversity Support Program.
- o Care should be taken if this element is to be supported through a cash transfer to the RTG. Biological diversity is not mentioned explicitly in the 7th Five-Year Plan. Moreover, several divisions within the RFD have different philosophies of forest management and devising indicators to ensure appropriate use of the money would be difficult. By going through the BSP, moneys can be channeled to the appropriate divisions within the RFD (i.e., the NPD, WCD, Herbarium, and the Community Forestry Division), targeted for Huay Kha Khaeng, as well as to the Wildlife Fund Thailand and other NGOs working in the area. It will be necessary to make very explicit conditions on the allocation of BSP moneys in any program support grant agreement.
- o Continue the National Park Service (NPS) PASA (\$313,756 left, included in the \$742,328 above) and allow it to run its course. Focus training and TA on RFD staff in Huay Kha Khaeng.

PART IV - REFERENCES

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3. List of Acronyms

AID/A.I.D.	Agency for International Development
AID/OIT	Office of International Training
ANE	Asia/Near East Bureau (AID/W)
BRM	Biological Resources Management Subproject of MANRES
BSP	Bioiversity Support Program AID/W S&T
CORIN	Coastal Research Institute, Prince of Songkhla Univ.
CRM	Coastal Research Management Subproject of MANRES
CRMP	Coastal REsources Management Project AID/W S&T
DTEC	RTC Department of Technical and Economic Cooperation

FAA	Foreign Assistance Act
HIID	Harvard Institute for International Development
HKK/TYN	Huay Kha Khaeng/Thung Yai Naresuan Wildlife Sanctuary
MANRES	Management of Natural Resources and Environment Project
MOE	Ministry of Education
MOI	Ministry of Interior
MOU	Memorandum of Understanding
NESDB	National Economic and Social Development Board
NGO	Non-governmental Organization
NPD	National Parks Division, Royal Forestry Department
ONEB	Office of the National Environment Board
OPP	Office of Policy and Planning, Ministry of Interior
PACT	Private Agencies Collaborating Together
PAD	Policy Analysis Development Subproject of MANRES
PASA	Participating Agency Services Agreement
PID	Project Identification Document
PIL	Project Implementation Letter
PIO/T	Project Implementation Order/Technical Services
PP	Project Paper
PSU	Prince of Songkla University
RRM	Rural Resources Management Subproject of MANRES
RTG	Royal Thai Government
TA	Technical Assistance
TDRI	Thailand Development Research Institute
TNC	The Nature Conservancy
USNPS	U.S. National Park Service
WCD	Wildlife Conservation Division, Royal Forestry Dept.
WEC	World Environment Center
WRI	World Resources Institute
WWF	World Wildlife Fund